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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,759	11/06/2000	Min-Kyu Hwang	3449-0137P	7993

2292 7590 11/20/2002

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EXAMINER

PHAN, THANH S

ART UNIT PAPER NUMBER

2841

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/705,759

Applicant(s)

HWANG ET AL.

Examiner

Thanh S Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "...wherein connecting pins and inserting holes, through which the connecting pins are inserted..." must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucheron [5,581,130] in view of Nagaune [5,539,253].

Boucheron disclose an one system module for use in a vehicle [figure 10] comprising a case [120] constituting a body of the one system module; a power board [124] located inside the case and electrically connected with the power pins; and a signal board [123] located inside the case and electrically connected with the signal

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pins, except for the power pins and signal pins are disposed adjacent to the edges on a surface of the case in a manner such that substantially a U-shaped arrangement is obtained.

Nagaune disclose a semiconductor device wherein the connecting pins [30, 31] are disposed adjacent to the edges on a surface of the case in a manner such that substantially a U-shaped arrangement is obtained [figure 2].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Nagaune 's teachings with Boucheron's for the purpose of reducing the size of the module.

Regarding claim 3, Boucheron further disclose wherein connecting pins [119, figure 10] are electrically connect the power board and the signal board with each other.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boucheron and Nagaune as applied to claim1 above, and further in view of Cooper et al. [5,375,040].

Boucheron and Nagaune disclose the one system module as claimed in claim 1 except for wherein at least two corner portions among four corner portions of the case, which two corner portions are opposite to each other in a diagonal direction, are defined with engaging holes, respectively, through which the case and a heat sink are coupled with each other.

Cooper discloses a case for a modular electronic circuit wherein at least two corner portions among four corner portions of the case, which two corner portions are opposite to each other in a diagonal direction, are defined with engaging holes (reference 14), respectively, through which the case and a heat sink (reference 70) are coupled with each other.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Boucheron and Nagaune with Cooper's case for quicker dissipation of heat generated by the circuit boards.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh S Phan whose telephone number is 703-305-0069. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David S Martin can be reached on 703-308-3121. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7722 for regular communications and 703-305-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TSP  
October 20, 2002

A handwritten signature in black ink, consisting of a stylized 'D' followed by a cursive 'M'.

**DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800**